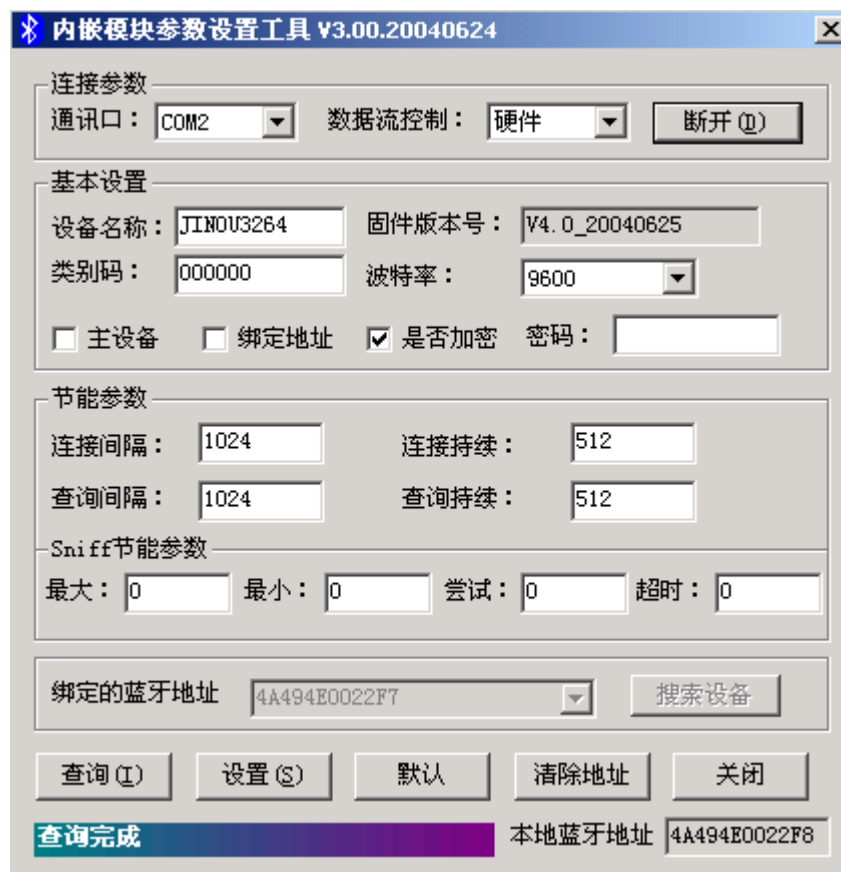


## 蓝牙内嵌模块参数设置工具使用说明

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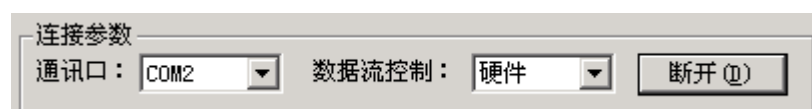


注意：使用参数设置工具时，首先请将 Cmd Data 开关拨到 Cmd 一侧，并保证底板正确接到计算机串口，同时该串口没有被其它软件占用。参数设置完毕后，请将 Cmd Data 开关拨到 Data 一侧，使修改后的参数生效。

## 一、功能介绍

蓝牙内嵌模块设置工具主界面如上图所示，它包括三个方面的内容：

### 1. 连接参数



即设置内嵌模块与计算机串口通讯的参数

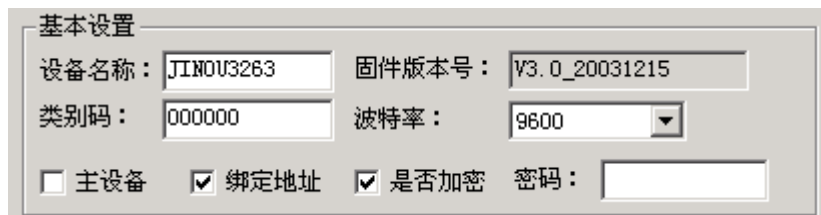
- **通讯口**

选择计算机与蓝牙内嵌模块通讯的串口，如 COM1、COM2

- **数据流控制**

选择流控方式。

## 2. 基本设置



The image shows a 'Basic Settings' dialog box with the following fields and controls:

- 设备名称:** Text input field containing 'JINOU3263'.
- 固件版本号:** Text input field containing 'V3.0\_20031215'.
- 类别码:** Text input field containing '000000'.
- 波特率:** Dropdown menu set to '9600'.
- 主设备:** Unchecked checkbox.
- 绑定地址:** Checked checkbox.
- 是否加密:** Checked checkbox.
- 密码:** Empty text input field.

- **设备名称**

设置内嵌模块的名称，只支持英文名称。

- **主设备**

设置蓝牙内嵌模块作为主设备，若没有选中，则为从设备。当双方都使用蓝牙内嵌模块时，必须是一个做主设备、一个做从设备，这样可以用作 RS232 线缆替代方案。

- **绑定地址**

是否绑定对方设备地址，打勾表示在此次连接匹配以后，将不能与其他设备再进行连接，而只能限制连接该设备地址。反之，则允许连接匹配任何设备。

- **类别码**

设备的类别，主从设备必须相同，或主设备使用 0x000000，从设备可以任意。具体见[附录](#)。

- **是否使用鉴权、加密**

若选中，对方设备在连接前必须输入密码进行鉴权，传输的数据也会加密。

- **密码**

进行鉴权时使用的密码。

- **波特率**

设置蓝牙内嵌模块在下次与设备通讯时的波特率。此波特率为蓝牙内嵌模块的波特率。

### 3. 节能参数与命令



- **Sniff 节能参数**

Sniff 有四个参数：最大，最小，尝试，超时。参数值 = 设置值  $\times$  625us。当四个参数都为 0 时，禁止 sniff 节能，内嵌模块全速运行，数据的传输速度最大，但功耗较大，建议数据流量较大时使用。如果允许 sniff 节能，内嵌模块的功耗将减少，建议数据流量较小时，允许 sniff 节能，可以减少功耗，例如：最大 = 800, 最小 = 80, 尝试 = 8, 超时 = 8。

- **连接间隔**

每次连接扫描的间隔时间，即每隔多长时间允许连接。间隔时间 = 设置值  $\times$  625us

- **连接持续**

每次连接扫描的持续时间，即保持连接状态的时间。持续时间 = 设置值  $\times$  625us

**注：连接持续时间不能大于连接间隔时间。**

- **查询间隔**

每次查询扫描的间隔时间，即每隔多长时间允许查询。间隔时间 = 设置值  $\times$  625us

- **查询持续**

每次查询扫描的持续时间，即保持查询扫描状态的时间。持续时间 = 设置值  $\times$  625us

**注：查询持续时间不能大于查询间隔时间。**

- **查询**

查询内嵌模块的当前设置。

- **设置**

将参数设置到内嵌模块，但必须在下次启动之后才能有效。

- **默认**

内嵌模块恢复为默认设置，但必须在下次启动之后才能有效。

- **清除地址**

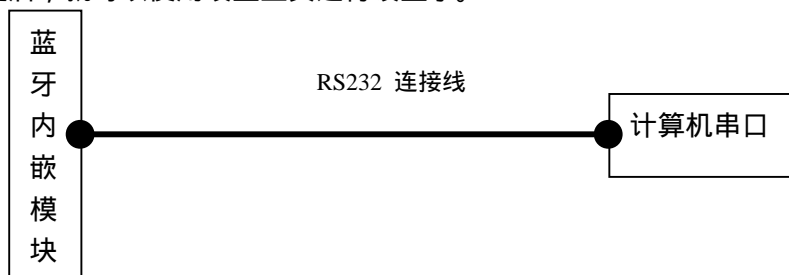
清除蓝牙内嵌模块内保存的对方蓝牙设备的地址。蓝牙内嵌模块一旦与某个蓝牙设备建立连接，它就会将它的地址保存起来，下次再通讯时，蓝牙模块只能与这个蓝牙设备进行通讯，不会再接受其他的地址，可以通过此工具清除蓝牙地址，这样可以与其他的设备进行通讯。

## 二、设置过程

### 1. 前期准备

蓝牙内嵌模块有两种工作模式，一种是参数设置模式，另一种是通讯模式，当内嵌模块的 Cmd Data 开关拨到 Cmd 一侧（即 CLR 脚为低电平），就为参数设置模式，一旦 Cmd Data 开关拨到 Data 一侧（即 CLR 脚为高电平），就自动进入通讯模式。要设置参数，必须使蓝牙内嵌模块进入参数设置模式。

设置参数前，必须将蓝牙内嵌模块通过串口线与计算机相连，如下图所示。连接并加电启动之后，就可以使用设置工具进行设置了。



### 2. 设置

一切准备就绪之后，在设置工具的连接设置框内选择合适的参数，如通讯口，流控方式，点击连接按钮与内嵌模块建立连接。

当连接成功之后，系统会将查询到的蓝牙内嵌模块的当前设置参数显示在屏幕上。

用户若需要修改其中的某些参数，如波特率，可以选择相应的参数，输入合适的值之后，点击设置按钮进行设置。设置完成后，可以执行查询命令检查参数设置是否正确。

设置完参数后，必须将 Cmd Data 开关拨到 Data 一侧，参数才会生效，此时可以正常使用内嵌模块了。

**注：不要经常设置参数，以免损坏芯片**

## 附录

### 设备类别号

The Class of Device/Service (CoD) field has a variable format. The format is indicated using the 'Format Type field' within the CoD. The length of the Format Type field is variable and ends with two bits different from '11'. The version field starts at the least significant bit of the CoD and may extend upwards.

In the 'format #1' of the CoD (Format Type field = 00), 11 bits are assigned as a bit-mask (multiple bits can be set) each bit corresponding to a high level generic category of service class. Currently 7 categories are defined. These are primarily of a 'public service' nature. The remaining 11 bits are used to indicate device type category and other device-specific characteristics.

Any reserved but otherwise unassigned bits, such as in the Major Service Class field, should be set to 0.

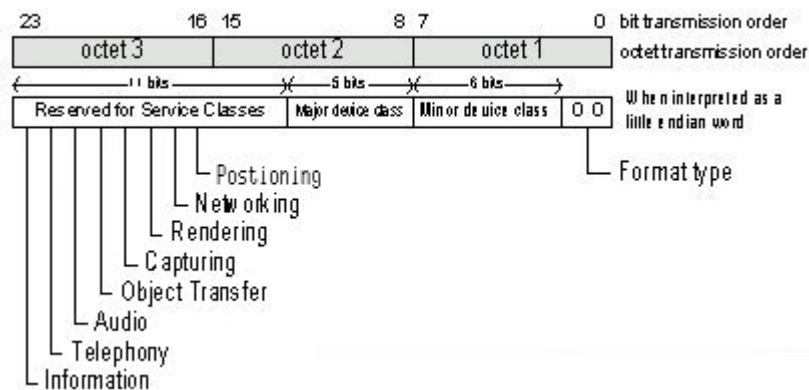


Figure 1.2: The Class of Device/Service field (first format type). Please note the order in which the octets are sent on the air and stored in memory. Bit number 0 is sent first on the air.

#### 1. MAJOR SERVICE CLASSES

Bit no	Major Service Class
13	Limited Discoverable Mode [Ref #1]
14	(reserved)
15	(reserved)
16	Positioning (Location identification)
17	Networking (LAN, Ad hoc, ...)

18	Rendering (Printing, Speaker, ...)
19	Capturing (Scanner, Microphone, ...)
20	Object Transfer (v-Inbox, v-Folder, ...)
21	Audio (Speaker, Microphone, Headset service, ...)
22	Telephony (Cordless telephony, Modem, Headset service, ...)
23	Information (WEB-server, WAP-server, ...)

TABLE 1.2: MAJOR SERVICE CLASSES

[Ref #1 As defined in [See Generic Access Profile, Bluetooth SIG](#)]

## 2. MAJOR DEVICE CLASSES

The Major Class segment is the highest level of granularity for defining a Bluetooth Device. The main function of a device is used to determine the major class grouping. There are 32 different possible major classes. The assignment of this Major Class field is defined in Table 1.3.

12	11	10	9	8	Major Device Class
0	0	0	0	0	Miscellaneous [Ref #2]
0	0	0	0	1	Computer (desktop, notebook, PDA, organizers, .... )
0	0	0	1	0	Phone (cellular, cordless, payphone, modem, ...)
0	0	0	1	1	LAN /Network Access point
0	0	1	0	0	Audio/Video (headset, speaker, stereo, video display, vcr.....
0	0	1	0	1	Peripheral (mouse, joystick, keyboards, ..... )
0	0	1	1	0	Imaging (printing, scanner, camera, display, ...)
1	1	1	1	1	Uncategorized, specific device code not specified
X	X	X	X	X	All other values reserved

TABLE 1.3: MAJOR DEVICE CLASSES

[Ref #2: Used where a more specific Major Device Class code is not suited (but only as specified in this document). Devices that do not have a major class code assigned can use the all-1 code until 'classified']

## 3. THE MINOR DEVICE CLASS FIELD

The 'Minor Device Class field' (bits 7 to 2 in the CoD), are to be interpreted only in the context of the Major Device Class (but independent of the Service Class field). Thus the meaning of the bits may change, depending on the value of the 'Major Device Class field'. When the Minor

Device Class field indicates a device class, then the primary device class should be reported, e.g. a cellular phone that can also work as a cordless handset should use 'Cellular' in the minor device class field.

#### 4. MINOR DEVICE CLASS FIELD - COMPUTER MAJOR CLASS

7	6	5	4	3	2	Minor Device Class bit no of CoD
0	0	0	0	0	0	Uncategorized, code for device not assigned
0	0	0	0	0	1	Desktop workstation
0	0	0	0	1	0	Server-class computer
0	0	0	0	1	1	Laptop
0	0	0	1	0	0	Handheld PC/PDA (clam shell)
0	0	0	1	0	1	Palm sized PC/PDA
0	0	0	1	1	0	Wearable computer (Watch sized)
X	X	X	X	X	X	All other values reserved

TABLE 1.4: SUB DEVICE CLASS FIELD FOR THE 'COMPUTER' MAJOR CLASS

#### 5. MINOR DEVICE CLASS FIELD - PHONE MAJOR CLASS

7	6	5	4	3	2	Minor Device Class bit no of CoD
0	0	0	0	0	0	Uncategorized, code for device not assigned
0	0	0	0	0	1	Cellular
0	0	0	0	1	0	Cordless
0	0	0	0	1	1	Smart phone
0	0	0	1	0	0	Wired modem or voice gateway
0	0	0	1	0	1	Common ISDN Access
0	0	0	1	1	0	Sim Card Reader
X	X	X	X	X	X	All other values reserved



TABLE 1.5: SUB DEVICE CLASSES FOR THE 'PHONE' MAJOR CLASS

## 6. MINOR DEVICE CLASS FIELD - LAN/NETWORK ACCESS POINT

### MAJOR CLASS

7	6	5	Minor Device Class bit no of CoD
0	0	0	Fully available
0	0	1	1 - 17% utilized
0	1	0	17 - 33% utilized
0	1	1	33 - 50% utilized
1	0	0	50 - 67% utilized
1	0	1	67 - 83% utilized
1	1	0	83 - 99% utilized
1	1	1	No service available [REF #3]
X	X	X	All other values reserved

TABLE 1.6: THE LAN/NETWORK ACCESS POINT LOAD FACTOR FIELD

[Ref #3: "Device is fully utilized and cannot accept additional connections at this time, please retry later"]

The exact loading formula is not standardized. It is up to each LAN/Network Access Point implementation to determine what internal conditions to report as a utilization percentage. The only requirement is that the number reflects an ever-increasing utilization of communication resources within the box. As a recommendation, a client that locates multiple LAN/Network Access Points should attempt to connect to the one reporting the lowest load.

4	3	2	Minor Device Class bit no of CoD
0	0	0	Uncategorized (use this value if no other apply)
X	X	X	All other values reserved

TABLE 1.7: RESERVED SUB-FIELD FOR THE LAN/NETWORK ACCESS POINT

## 7. MINOR DEVICE CLASS FIELD - AUDIO/VIDEO MAJOR CLASS

7	6	5	4	3	2	Minor Device Class bit no of CoD
---	---	---	---	---	---	-------------------------------------

0	0	0	0	0	0	0	Uncategorized, code not assigned
0	0	0	0	0	0	1	Device conforms to the Headset profile
0	0	0	0	1	0	0	Hands-free
0	0	0	0	1	1	1	(Reserved)
0	0	0	1	0	0	0	Microphone
0	0	0	1	0	1	1	Loudspeaker
0	0	0	1	1	0	0	Headphones
0	0	0	1	1	1	1	Portable Audio
0	0	1	0	0	0	0	Car audio
0	0	1	0	0	1	1	Set-top box
0	0	1	0	1	0	0	HiFi Audio Device
0	0	1	0	1	1	1	VCR
0	0	1	1	0	0	0	Video Camera
0	0	1	1	0	1	1	Camcorder
0	0	1	1	1	0	0	Video Monitor
0	0	1	1	1	1	1	Video Display and Loudspeaker
0	1	0	0	0	0	0	Video Conferencing
0	1	0	0	0	1	1	(Reserved)
0	1	0	0	1	0	0	Gaming/Toy [Ref #4]
X	X	X	X	X	X	X	All other values reserved

[Ref #4: Only to be used with a Gaming/Toy device that makes audio/video capabilities available via Bluetooth]

TABLE 1.8: SUB DEVICE CLASSES FOR THE 'AUDIO/VIDEO' MAJOR CLASS

## 8. MINOR DEVICE CLASS FIELD - PERIPHERAL MAJOR CLASS

		Minor Device Class
7	6	bit no of CoD
0	1	Keyboard
1	0	Pointing device
1	1	Combo keyboard/pointing device

X X All other values reserved

TABLE 1.9: THE PERIPHERAL MAJOR CLASS KEYBOARD/POINTING DEVICE FIELD

Bits 6 and 7 independantly specify mouse,keyboard or combo mouse/keyboard devices. These may be combined with the lower bits in a multifunctional device.

				Minor Device Class
5	4	3	2	bit no of CoD
0	0	0	0	Uncategorized device
0	0	0	1	Joystick
0	0	1	0	Gamepad
0	0	1	1	Remote control
0	1	0	0	Sensing device
0	1	0	1	Digitizer tablet
X	X	X	X	All other values reserved

TABLE 1.10: RESERVED SUB-FIELD FOR THE DEVICE TYPE

## 9. MINOR DEVICE CLASS FIELD - IMAGING MAJOR CLASS

Minor Device Class bit no of CoD				
7	6	5	4	
X	X	X	1	Display
X	X	1	X	Camera
X	1	X	X	Scanner
1	X	X	X	Printer
X	X	X	X	All other values reserved

TABLE 1.11: THE IMAGING MAJOR CLASS BITS 4 TO 7

Bits 4 to 7 independantly specify display, camera, scanner or printer. These may be combined in a multifunctional device.

Minor Device Class		
3	2	
bit no of CoD		
0	0	Uncategorized, default
X	X	All other values reserved

TABLE 1.12: THE IMAGING MAJOR CLASS BITS 2 AND 3

Bits 2 and 3 are reserved

如

台式机： 0x120104

笔记本电脑： 0x12010C

蓝牙耳机： 0x200404